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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/973,762	10/11/2001	Toshiya Shimura	NU-01021	7580

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EXAMINER

TAYLOR, BARRY W

PART UNIT	PAPER NUMBER
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2643

DATE MAILED: 07/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/973,762

Applicant(s)

SHIMURA ET AL.

Examiner

Barry W Taylor

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 2, 6, 8-16 and 20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 2, 6, 8, 10, 12-13, 15-16 and 20 generally recite "up to 1.1 MHZ". The Examiner is unable to find support for Applicant's claimed subject matter. Furthermore, Applicant's figure 1 only goes up to 1 MHZ.

Claims 9, 11 and generally recite "3.2 MHz". The Examiner is unable to find support for Applicant's claimed subject matter. Furthermore, Applicant's figure only goes up to 1 MHZ.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koeman et al (5,731,706 hereinafter Koeman) in view of Valenti et al (US 2002/0041565 Valenti et al hereinafter Valenti). The following rejection is being made for what is best understood by the Examiner due to the 112 first rejections listed above.

Regarding claims 1, 3 and 17. Koeman teaches a system for measuring cross-talk (Title, abstract) comprising:

polling means included in an outside line of an xDSL circuit installed in an office for pulling a subscriber line (see switch matrix 200 figures 5-6);

noise level measuring means for measuring a level of cross-talk noise on the subscriber line (see receiver 208 and 218 in figures 5-6); and

decision means for determining, based on the level of cross-talk noise measured, whether or not the subscriber line is usable (see microprocessor 212 figures 5-6 wherein signals are provide to the microprocessor allowing the microprocessor to

determine whether or not the subscriber line is usable or not by comparing the values to a look-up table---see 54 figures 5-6).

According to Applicant's newly added claim language and arguments, Koeman fails to teach wherein the measured cross-talk noise characteristic is cross-talk **existing** on the subscriber telephone line due to interference from other subscriber telephone lines. Instead, Koeman only focuses on home network line pairs having frequency in range beyond the newly recited range appearing in Applicant's amended claim language (see Amendment "C", paper number 13, dated 6/14/2004 and argument appearing on the last three lines of page 11). In other words, Koeman only focuses on home network lines having frequency range above xDSL services (i.e. between 25 kHz to 1.1 MHZ).

The reason for Koeman not considering xDSL frequency range is that Koeman tester is to be used during **installation phase** enabling installers the ability to verify proper transmission performance (see BACKGROUND of Koeman) of wire pairs. Modifying Koeman tester to include testing for cross-talk after installation phase (i.e. in-service and/or existing) would only add flexibility to the tester as taught by Koeman.

Valenti provides the hardy needed tester (paragraphs 0034 to 0036) wherein volt meter (last two lines of paragraph 0046) is used to determine if crosstalk exists on bundled telephone cable (abstract, paragraphs 0046-0050). Valenti indeed characterizes crosstalk on a loop-by-loop basis enabling for a much more granular

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crosstalk characterization of plant (paragraphs 0010-0011) by focusing on limited frequencies (i.e. ISDN and ADSL) having unique crosstalk power spectral density (see figure 11 and paragraph 0036). Valenti also uses the terms "NEXT" and "FEXT" to classify the two types of crosstalk (paragraphs 0041-0041). Valenti even identifies services that are generating crosstalk on a pair that may not even be carrying DSL services (see middle of paragraph 0046). Valenti also uses measures crosstalk noise of subscriber line only within an xDSL transmission frequency band (see figures 5-7) including SDSL (see Table 2 page 5) to properly identify disturbers (paragraphs 0052-0054). Valenti is capable of identifying mixed crosstalk when at least two different services are present in a binder (paragraph 0055).

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to modify the tester as taught by Koeman to use limited frequencies as taught by Valenti for the benefit of testing for crosstalk after installing new bundles of cable thereby creating a more flexible tester that may be used not only during installation but a tester that may be used after installation as well.

Regarding Claim 2. Valenti teaches the measurement of crosstalk is made without injecting a test tone onto the subscriber telephone line (see figure 2 wherein voltage measurement of TIP and RING used) only within a frequency band up to 1.1 MHZ (paragraphs 0036, 0041 and 0050, see frequencies listed in figures 4-10).

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Regarding claim 4. Koeman discloses using a switch matrix 200 figures 5-6 for selecting a set of wire pairs 1-4 to be tested.

Regarding claims 5 and 7. Koeman teaches wherein the noise level measuring means comprises:

a voltage measuring circuit for measuring cross-talk noise voltage input via relays (see figures 5-6 wherein a signal source 202 produces stimulus signal input via relay matrix 200 and measuring circuit (i.e. RECEIVER) receives response signal and converts the response signal to a digital signal 208 and transforms the digital signal to noise spectrum by using FFT processor 210); and

an ADC circuit ... (see figures 5-6 wherein a signal source 202 produces stimulus signal input via relay matrix 200 and measuring circuit (i.e. RECEIVER) receives response signal and converts the response signal to a digital signal 208 and transforms the digital signal to noise spectrum by using FFT processor 210); and

an FFT circuit ... (see figures 5-6 wherein a signal source 202 produces stimulus signal input via relay matrix 200 and measuring circuit (i.e. RECEIVER) receives response signal and converts the response signal to a digital signal 208 and transforms the digital signal to noise spectrum by using FFT processor 210).

Regarding claims 6 and 8. Koeman teaches wherein the decision means comprises means for comparing the noise spectrum data with a template for noise level decision to thereby determining whether or not the subscriber line is usable (see figures 5-6 wherein a look-up table (i.e. template) is used for comparing the FFT signal (i.e. noise spectrum) to values stored in look-up table 54). Valenti also teaches xDSL

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frequency range (paragraphs 0036, 0041 and 0050, see frequencies listed in figures 4-10).

Regarding claims 9-16 and 20. The following rejection is being made for what is best understood by the Examiner due to the 112 first rejections listed above. Valenti teaches noise levels of existing xDSL services operating in xDSL frequency ranges (paragraphs 0036, 0041 and 0050, see frequencies listed in figures 4-10).

Regarding claim 18. Valenti teaches ISDN signal (paragraphs 0036, 0041 and 0050, see frequencies listed in figures 4-10).

Regarding claim 19. Valenti teaches a second xDSL channel (paragraph 0055).

Response to Arguments

3. Applicant's arguments with respect to claims 1 and 3 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barry W. Taylor whose telephone number is (703) 305-4811. The examiner can normally be reached on Monday-Friday from 6:30am to 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on (703) 305-4708. The fax phone number for this Group is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Technology Center 2600 customer service Office whose telephone number is (703) 306-0377.


CURTIS KUNTZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600